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09/966,374	09/27/2001	Sahil Bansal	CX03015USU(00CXT0352D)	5097

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Francisco A Rubio-Campos Esq
The Eclipse Group
26895 Aliso Creek Road
Suite B 104
Aliso Creek, CA 92656-5301

EXAMINER

AHMED, SALMAN

ART UNIT PAPER NUMBER

2616

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,374

Applicant(s)

BANSAL ET AL.

Examiner

Salman Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/1/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 47-50 is/are rejected.
- 7) ☒ Claim(s) 51-57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/27/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 47-57 are pending.

Claims 1-46 are cancelled by the Applicant.

Claims 47-50 are rejected.

Claims 51-57 are objected.

Claim Objections

1. Claim 51 is objected to because of the following informalities:

Claim 51 line 2 "Claim 16" should be corrected to --Claim 50--.

Claim 51 line 4 "Null IB" should be corrected to --Null IE--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows et al. "DOCSISTM cable modem technology", Communications Magazine, IEEE

Publication Date: March 2001, hereinafter referred to as Fellows in view of Bushmitch et al. "Supporting MPEG video transport on DOCSIS-compliant cable networks", Communications, IEEE Journal on Publication Date: Sept. 2000, hereafter referred to as Bushmitch, and in view of Cheng et al. (US PAT PUB 2003/0218622), hereinafter referred to as Cheng.

Fellows teaches a method of filtering upstream scheduling messages in a data communication system (page 202, section: Introduction, cable system) that includes a headend (page 202, section: Introduction, a cable modem termination system (CMTS)) and at least one subscriber unit (page 202, section: Introduction, a cable data system consists of multiple cable modems (CMs), in subscriber locations) wherein the system has an upstream and a downstream transmission path (page 202, section: DOCSIS protocol stack, The CM will receive an IP packet from host customer premises equipment (CPE), typically over Ethernet, and will add link encryption, mediate access to the return path, and finally modulate the data onto the cable network) the method comprising: obtaining a scheduling message from the headend (page 205 section: Obtain Upstream Parameters, the CM is looking for MAC messages that are repeatedly sent by the CMTS on all DOCSIS downstream channels), the scheduling message having a plurality of information elements (IE's); filtering the scheduling message to identify a plurality of IEs that are associated and that correspond to a selected subscriber unit (page 205 section: Channel Acquisition: the modem first scans for a downstream channel, obtains QAM lock, and finds MPEG packets with the DOCSIS well known PID) by: filtering the scheduling message to identify well known addresses

(page 205 section: Channel Acquisition: MPEG packets with the DOCSIS well known PID) using a software implementation; and filtering the scheduling message to identify IEs that are associated with the selected subscriber unit (MPEG-2 provides a mechanism to identify individual packets within an MPEG-2 stream such that a CM or set-top box can identify which packets it should decode. This mechanism, called a program identifier (PID), is present in all MPEG-2 frames. DOCSIS has declared the value 0X1FFE to be the well-known PID for all CM traffic on that channel. DOCSIS CMs will only operate on MPEG packets with this PID).

Fellows does not explicitly teach storing an information set based upon the plurality of IEs obtained in the step of filtering the scheduled message into a filtered scheduling message.

Bushmitch in the same field of endeavor teaches storing an information set based upon the plurality of IEs (format is shown in Fig. 2 in page 1582, The MAP message contains a list of time intervals, the type of traffic each interval is allowed to carry, and an identifier that defines a particular cable modem) obtained in the step of filtering the scheduled message into a filtered scheduling message (page 1582, In Fig. 2, the service identifier (SID) identifies a particular upstream service flow within the MAC domain) Bushmitch in the same field of endeavor further teaches in page 1582 and figure 2, the allocation of upstream intervals to the CMs is accomplished using MAC MAP messages sent by the CMTS periodically in the downstream direction; In Fig. 2, the service identifier (SID) which is derived from the incoming MAC MAP messages

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sent by the CMTS periodically, identifies a particular upstream service flow within the MAC domain.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fellows' teaching to incorporate the well known method/standards of storing an information set based upon the plurality of IEs obtained in the step of filtering the scheduled message into a filtered scheduling message with specific information elements (IEs) as taught by Bushmitch, page 1582 and figure 2. The motivation is that it is advantageous to adapt to known methods/standards for implementation of DOCSIS based communication for following reasons: Companies actively involved in adhering to known methods/standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Known methods/standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of known methods/standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use known methods/standards. In addition, known methods/standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use known methods/standards to broaden their potential markets.

Fellows and Bushmitch teaches a scheduling scheme for scheduling data transmission as described above.

Fellows and Bushmitch do not explicitly teach determining the correct identifier or address of the unit by writing a service identifier (SID) of a selected IE into a hardware input register, comparing the hardware input register contents to a hardware look-up table; storing the resulting comparison value into a hardware result register.

Cheng et al. in the similar field of endeavor teaches using hardware input register for comparing the contents to a hardware look-up table; storing the resulting comparison value into a hardware result register (page 2 section 0024, lookup table 210 consists of bits 7 through 2 of seven different registers, those registers being CRT 90, CRT 92, CRT 94, CRT 96, CRT 98, CRT 9A and CRT DEFAULT. Each of these registers is coupled to compare logic or comparison block CMP 240. Also coupled to compare logic 240 is a six bit line leading from a register CRT 12. This six-bit line leads from bits 7 through 2 of register CRT 12. Within compare logic 240 the value of CRT 12 in bits 7 through 2 is compared with the value of each of the registers in lookup table 210).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fellows and Bushmitch's system/method by using registers and lookup tables for comparison for finding values as taught by Cheng. The motivation is that such method of using registers and lookup tables for comparison in a computer-based system is very fast and efficient.

4. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows in view of Bushmitch.

In regards to claim 48, Fellows teaches a method of filtering upstream scheduling messages in a data communication system (page 202, section: Introduction, cable system) that includes a headend (page 202, section: Introduction, a cable modem termination system (CMTS)) and at least one subscriber unit (page 202, section: Introduction, a cable data system consists of multiple cable modems (CMs), in subscriber locations), wherein the system has an upstream and a downstream transmission path (page 202, section: DOCSIS protocol stack, The CM will receive an IP packet from host customer premises equipment (CPE), typically over Ethernet, and will add link encryption, mediate access to the return path, and finally modulate the data onto the cable network), the method comprising: obtaining a scheduling message from the headend (page 205 section: Obtain Upstream Parameters, the CM is looking for MAC messages that are repeatedly sent by the CMTS on all DOCSIS downstream channels), the scheduling message having a plurality of information elements (IE); filtering the message to identify a plurality of IEs that correspond to a selected subscriber unit (page 205 section: Channel Acquisition: the modem first scans for a downstream channel, obtains QAM lock, and finds MPEG packets with the DOCSIS well known PID), and to generate a filtered MAP message having a plurality of data fields; and storing an information set based upon the plurality of IEs obtained in the step of filtering the MAP message into a filtered scheduling message.

Fellows does not explicitly teach the scheduling message being MAP message and generating a filtered MAP message having a plurality of data fields; and storing an information set based upon the plurality of IEs obtained in the step of filtering the MAP message into a filtered scheduling message. Fellows does not explicitly teach obtaining a scheduling message from the headend, the scheduling message including a MAP message having a plurality of information elements (ies).at least one IE including a service identifier (SID), an interval Usage Code (IUC), a Minislot offset and a Minislot length value.

Bushmitch in the same field of endeavor teaches (page 1582 and figure 2) the allocation of upstream intervals to the CMs is accomplished using MAC MAP messages sent by the CMTS periodically in the downstream direction; their format is shown in Fig. 2. The MAP message contains a list of time intervals, the type of traffic each interval is allowed to carry, and an identifier that defines a particular cable modem (actually a particular Service Flow within a particular CM). Bushmitch in the same field of endeavor further teaches in page 1582 and figure 2, the allocation of upstream intervals to the CMs is accomplished using MAC MAP messages sent by the CMTS periodically in the downstream direction; In Fig. 2, the service identifier (SID) which is derived from the incoming MAC MAP messages sent by the CMTS periodically, identifies a particular upstream service flow within the MAC domain. In Fig. 2, the service identifier (SID) identifies a particular upstream service flow within the MAC domain. Bushmitch further teaches (page 1582 and figure 2) the MAP message containing a list of time intervals, the interval usage code (IUC), start time for transmission and (page 1582 and figure 2)

an IE of the MAP message includes a service identifier (SID), an interval Usage Code (1UC), a Minislot offset.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fellows' system/method to incorporate the well known methods/standards of storing an information set based upon the plurality of IEs obtained in the step of filtering the scheduled MAP message into a filtered scheduling message with specific information elements (IEs) as taught by Bushmitch (page 1582 and figure 2). The motivation is that it is advantageous to adapt to known methods/standards for implementation of DOCSIS based communication for following reasons: Companies actively involved in adhering to known methods/standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Known methods/standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of known methods/standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use known methods/standards. In addition, known methods/standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use known methods/standards to broaden their potential markets.

5. Claims 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fellows in view of Bushmitch as applied to claim 48 above, and further in view of "Media Access Control Protocol Based on DOCSIS 1.1", Sater et al. hereinafter referred to as Sater.

Fellows and Bushmitch teach using MAP messages for scheduling as described in the rejections of claim 48 above.

Fellows and Bushmitch do not explicitly teach the MAP message further includes at least one Real IE and at least one Null IE. In regards to claim 50, Fellows and Bushmitch do not explicitly teach the MAP message further includes at least one Real IE, at least one Null IE and at least one Acknowledgement IE.

Sater in the same field of endeavor teaches the MAP message further includes at least one Real IE and at least one Null IE and at least one Acknowledgement IE (page 25, "Current Map Message" table shows all real IEs except the last row which has NULL and Acknowledgement IEs "Data Grant").

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fellows and Bushmitch's teaching to incorporate MAP message further including at least one Real IE and at least one Null IE and Acknowledgement IE as taught by Sater. The motivation is that Real IE, Null IE and Acknowledgement IE are in DOCSIS 1.1 MAP implementation/standard as suggested by Sater (page 25, "Current Map Message" table shows all real IEs except the last row which has NULL). It is advantageous to adapt to known methods/standards for implementation of DOCSIS based communication for following reasons: Companies

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actively involved in adhering to known methods/standards more frequently reap short- and long-term cost-savings and competitive benefits than those that do not. Standardization can lead to lower transaction costs in the economy as a whole, as well as to savings for individual businesses. Known methods/standards have a positive effect on the buying power of companies. Standards can help businesses avoid dependence on a single supplier because the availability of known methods/standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies also have increased confidence in the quality and reliability of suppliers who use known methods/standards. In addition, known methods/standards are used by businesses to exert market pressure on companies further down the value chain, i.e., their clients. Thus, businesses can use known methods/standards to broaden their potential markets.

Allowable Subject Matter

6. Claims 51-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments, see pages 19-20 of the Remarks section, filed 5/1/2006, have been fully considered and are not persuasive. Applicants argues claims 47-57 are

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claims 10 and 14-23 re-written to include limitations from the base claims and any intervening dependent claims. However the Examiner respectfully disagrees with this assertion. The Applicant has omitted limitations of base claim. For example, in regards to claim 47, the applicant has omitted from claim 1, "selected modulation scheme to transport data", from claim 9, "the sub-step of filtering for 1Es associated with the selected subscriber unit is implemented in hardware", from claim 10, "triggering an automatic comparison of" and "determining whether a specified bit in the hardware result register is a logical one, and if the specified bit is a logical one, determining that ..." etc. As such the Applicant has changed the scope and content of the base claim. Similar problem exists in claim 48.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600